Section 7.6
Roof Dripline Filtration BMP

7.6.1 Description

The runoff from a peaked roof without gutters may be detained at the drip line, be filtered through the foundation backfill and be discharged via a foundation underdrain pipe or equivalent.

7.3.2 General Design Criteria

The roof dripline filtration BMP needs to be designed with storage or for infiltration with the following design criteria:

- All appropriate specifications from the Stormwater Management rules, Appendix E, and the Stormwater Management for Maine BMP Manual, Chapter 7, Filtration BMPs, apply to this design.
- To meet the General Standards requirements (treatment of 1 inch of runoff), a minimum storage capacity within a reservoir course is needed to allow for the treatment of one inch or more of runoff.
- To meet the Flooding Standards requirements, the reservoir needs to provide a minimum storage capacity for the direct entry of the rain precipitation from a 24-hour, 25-year storm (5 + inches) or an overflow may be needed or provided for.
- The filter bed may be part of the foundation backfill.
- An underdrain pipe system is needed to drain the infiltrated water and can have the dual purpose of underdraining the foundation also.
- Stored volume needs to fully drain within no less than 24 hours and no more than 48 hours. An orifice may be needed to regulate the outflow.

7.6.3 Specific Design Criteria

Drip line edge: The drip line trench needs to extend the length of the building or area of roof to be treated.
Treatment Storage; the reservoir bed at the drip line must consist of crushed rock with a porosity of 40%. Its width and depth is sized based on the runoff volume from the roof.(for example, a 30 foot wide roof panel will need a 4 foot wide by 1.5 foot deep rock storage bed.
Reservoir Course: The depth of the reservoir course shall be based on the desired storage volume and frost. The reservoir course should consist of clean washed ¾ to 1 inch aggregate that is free of debris.
Overflow: Unless an overflow system is provided for the runoff from larger storms, a deeper storage bed will need to be provided.
Treatment Filter: The backfill for the foundation may be used as the filter media as long as the material is a mineral soil with between 4 and 7% fines (passing #200 sieve) and is 4 inches thick at a minimum.
Impermeable Membrane: To prevent the penetration of water into a basement, the system may be lined with an impermeable membrane.
Underdrain Bed: An underdrained bed consisting of a minimum of 12 inches of underdrain gravel meeting the MDOT Specification 703.22, Type B should be a minimum of 12 inches to provide sufficient coverage for the underdrain piping. Crushed rock is an acceptable option and should be wrapped in filter fabric.

7.6.4 Maintenance Criteria

A dripline filter bed needs to be maintained like any other filter basin. The maintenance activities for filter BMPs listed in Chapter 7 of the BMP manual apply equally to this type of structure. Any debris must be removed from

the reservoir course. The Maintenance plan needs to address that these structures are part of the stormwater management plan for the project, cannot be paved over or altered in anyway. No gutter may be installed on the roof line.